

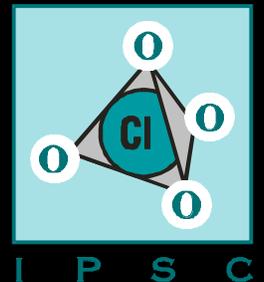
# Development of the Revised Reference Dose / Risk Assessment

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Perchlorate Stakeholders Forum  
Sponsored by the IPSC  
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# Outline

- EPA risk assessment guidelines
- NCEA perchlorate toxicity assessment team
- Revised RfD / risk assessment process

# Recommended Studies

- 90-Day subchronic bioassay
- Developmental neurotoxicity study
- Genotoxicity assays
- Mechanistic studies
- ADME - Absorption, Distribution, Metabolism and Elimination
- Developmental study
- 2-Generation reproductive toxicity study
- Immunotoxicity

# **EPA Risk Assessment Guidelines**

- Principles and procedures to frame the conduct of risk assessments
- Promote consistency and technical quality of scientific inferences
- Flexible, full consideration to all relevant scientific information case-by-case
- Revised as experience and scientific consensus evolve

# EPA Risk Assessment Guidelines

- Developmental toxicity (1991)  
FR 56(234): 63798 - 63826
- Reproductive toxicity (1997)  
EPA No. EPA/630/R-96/009a  
NTIS PB97-100093
- Neurotoxicity (1998)  
EPA No. EPA/630/R-95/001Fa  
NTIS PB98-117831
- Thyroid follicular cell tumors (1998)  
EPA/630/R-97-002

# EPA Risk Assessment Guidelines

- Proposed revision to carcinogenicity (1996)  
EPA/600/P-92/003C  
NTIS PB96-157599
- Exposure (1992)  
FR 57 (104): 22888 - 22938
- Chemical mixtures (1986) / Proposed 1998

# Guidelines Available

- <http://www.epa.gov/ncea>
- EPA ORD publications, Technology Transfer and Support Division, NRML  
Phone: 513.569.7562; FAX:  
513.569.7566. Need the EPA No.
- National Technical Information Service (NTIS): 703.487.4650; FAX:  
703.321.8547. Need the NTIS PB No.

# NCEA Perchlorate Toxicity Risk Assessment Team

- Harlal Choudhury      NCEA      general toxicology / risk assessment
- Eric Clegg      NCEA      reproductive toxicology
- Kevin Crofton      NHEERL      neurotoxicology
- Vicki Dellarco      OW      genetic toxicology
- Annie Jarabek      NCEA      general toxicology / dosimetry / risk assessment
- Gary Kimmel      NCEA      developmental toxicology
- MaryJane Selgrade      NHEERL      immunotoxicology

# **Toxicity Study Review and Revised RfD / Risk Assessment**

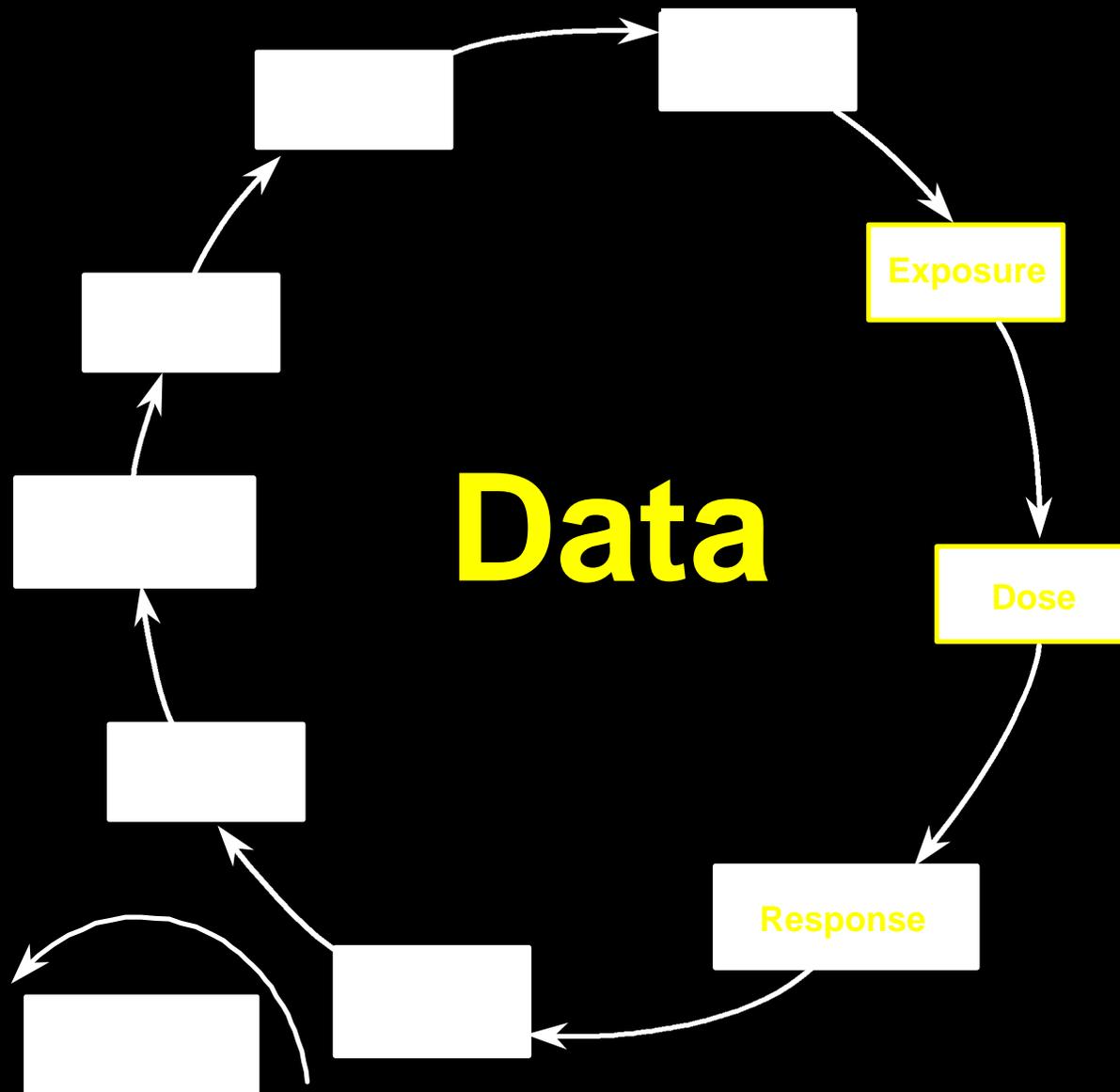
- **Review of existing and new toxicity data**
- **Hazard identification**
- **Dose-response evaluation**
  - **Designation of effect levels (mathematical modeling or NOAEL / LOAEL procedure)**
  - **UF assignment**
  - **Uncertainty characterization - confidence statements**

# Revised RfD / Risk Assessment Review Process

- Internal peer review (September 1998)
- External peer review (October 1998)
- Response / revisions subsequent to external peer review (November 1998)
- Submit final revised RfD / risk assessment to Integrated Risk Information System (IRIS) process
- Refine as required with new data

# Future Applications of Revised RfD

- Basis for various guidance levels (e.g., Health Advisory, NPDWR, Superfund remediation goals)
- Converted through the use of standard ingestion and body weight parameters (e.g., 2 L / day and 70 kg for adult)



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